

Bellwork: 4/10/13

Solve the following equation. Don't forget your restrictions!

$$\frac{2 \cdot 10}{x^2+3x} + \frac{2 \cdot 2(x+3)}{x} = \frac{x \cdot x}{2x+6} \quad \text{LCD: } 2x(x+3)$$

Rest: $x=0$ $x+3=0$
 $x \neq 0, -3$

$$20 + 4(x+3) = x^2$$

$$20 + 4x + 12 = x^2$$

$$x+4=0 \quad x-8=0$$

$$\begin{array}{r} 4x+32 \\ -4x-32 \\ \hline 0 \end{array} = x^2 - 4x - 32$$

$$\boxed{x = -4, 8}$$

$$(x+4)(x-8)$$

$$3) \frac{2 \cdot 5}{x^2-3x-28} + \frac{7(x+4)}{2x-14} \quad \text{LCD: } 2(x-7)(x+4)$$
$$2(x+4)(x-7) \mid 2(x-7)(x+4)$$

$$10 + 7x + 28$$

$$\frac{7x+38}{2(x-7)(x+4)}$$

$$7) \frac{2x}{x^2-4x} + \frac{2}{x} = \frac{2x}{2x-8}$$

$$2x(x-4) \mid x \mid 2(x-4)$$

$$\text{LCD: } 2x(x-4)$$

$$x=0 \quad x-4=0$$

$$x \neq \underline{0, 4}$$

$$2x + 4(x-4) = 2x$$

$$2x + 4x - 16 = 2x$$

$$\begin{array}{r} 6x - 16 = 2x \\ -2x \quad -2x \\ \hline -16 = -4x \end{array}$$

$$\begin{array}{r} -16 = -4x \\ \hline -4 \quad -4 \\ \hline 4 \end{array}$$

$$x = 4$$

$$x = \underline{\text{no solution}}$$

